

CONFIDENTIAL

FORM 100-1

CENTRAL INTELLIGENCE AGENCY

REPORT

## INFORMATION REPORT

CD NO.

COUNTRY Germany (Russian Zone)

DATE DISTR. 10 FEB 51

SUBJECT Manufacture of Strasburg Airborne Receiver at RFT

NO. OF PAGES 3

PLACE ACQUIRED

NO. OF ENCLS.  
(LISTED BELOW)

DATE OF INFO.

SUPPLEMENT TO REPORT NO.

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE ACT OF U.S.C. 51 AND 52, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. REPRODUCTION OF THIS FORM IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

1. The Strasburg airborne receiver for guided missiles is assembled at the RFT, Berlin/Köpenick, Zentrallaboratorium für Signal und Sonderanlagen. The set is then taken from the plant by Soviet officers to the USSR, where it is to be incorporated in a Wasserfall-type guided missile. Up to date, 60 receivers have been assembled as pre-production models, and orders are expected for 800 - 1000 more after the first models have been examined and tested in the USSR. The four parts of the receiver are manufactured in different factories in the Soviet Zone and are brought to Köpenick for assembly. The factory names are not yet available.
2. The receivers are assembled in the "Kommerzielle Abteilung" with which the Abteilung Gross-Sender is associated. The names of personnel in both departments are given below together with the Director of RFT:
 

<ol style="list-style-type: none"> <li>a. Director:</li> <li>b. Buying Chief:</li> <li>c. Technical heads controlling the departments, listed below:               <ol style="list-style-type: none"> <li>(1) Receivers and navigational apparatus</li> <li>(2) Transmitters:</li> </ol> </li> </ol>	<p>Paulussen. Bow,  Noffke, Schlötzer. Muttman, Lange, Sicher, Kotditsche. Dr. Kaiser. Pfeifer Götzeit Becher Grimm</p>
--	---
3. Each receiver consists of the following four parts delivered from four different factories:
 

<ol style="list-style-type: none"> <li>a. HF preliminary stage and mixer stage (HF-Vorstufe und Mischstufe).</li> <li>b. Oscillator stage and rectification stage (Oszillator Stufe).</li> <li>c. Intermediate frequency section (Zwischenfrequenzteil).</li> <li>d. Low frequency section (Niederfrequenzteil).</li> </ol>	<p>50X1-HUM</p> <p>Revised No. 04</p> <p>No Change in Class. <input type="checkbox"/></p> <p><input checked="" type="checkbox"/> Declassified</p> <p>Group Changed To: TS S (C)</p> <p>Auth: HQ 10-2</p> <p>Date: 10/07/78</p>
---	--

CONFIDENTIAL

CLASSIFICATION SECRET/CONTROL - U.S. OFFICIALS ONLY

STATE ☒ NAVY ☒ AIR ☐ ARMY ☐ MARINE ☐ DISTRIBUTION

~~SECRET~~/CONTROL - U.S. OFFICIALS ONLY

CENTRAL INTELLIGENCE AGENCY

50X1-HUM

- 2 -

4. The receiver has only 13 channels as compared with the 18 channels of the wartime receiver because the Soviets find it necessary to economize on crystals.
5. The following technical details are available regarding each of the four parts of the receiver mentioned above:
  - a. Preliminary stage and mixer stage. The input circuit is fed into a band filter. The coupling coil receives the potential from both dipoles and is firmly coupled to the input circuit. The succeeding amplifier tube is a RV 12 P 2000 which has exponential characteristics and receives an unretarded control voltage generated in the IF part of the receiver.
    - (1) The oscillator grid potential is stepless. An oscillating circuit lies in the anode circuit and is inductively coupled to a second circuit lying in the input/grid circuit of the Mixer stage. The waviness (sic) of this input amplifier is great over its whole band width to produce a relatively uniform amplification.
    - (2) The RV 12 P 2000 is used as a mixing tube, and the mixing takes place additively. The oscillator voltage/potential is fed in small capacity on to the grid of this tube. The screen grid circuit is stepless, and its voltage supply is [REDACTED] that no undesired IF circuit feed back can be evoked over the [REDACTED] supply.
    - (3) The first IF circuit lies in the triode circuit of the mixer stage, and a coupling coil takes the current from this for the IF amplifier.
  - b. Oscillator and rectification stage: The oscillating tube is the RV 12 P 2000. The oscillator is electronically coupled, and the oscillating circuit condenser serves a temperature compensation combination. The circuit inductance is in 14 stages with a spacing between each channel of 50 KC's.
    - (1) A trimmer lies parallel to the output terminal of the oscillator circuit with which the residual capacity of the mixer stage is balanced.
    - (2) A RV 12 P 2001 is then switched in here for the rectification stage as a reactive resistance control, and the circuit allows the reactive resistance of the tube to form a capacitance; the screen grid voltage of the tube is firmly stable. Precise adjustment of the earth grid voltage is obtained with the use of a potentiometer as a cathode resistor. Through alteration of the grid plate conductance, the reactive resistance control of this tube can be inertialess (sic) controlled over wide limits. The voltage control for this stage is in the tuning control stage which is generated in the IF part.
  - c. Intermediate frequency part: This part is itself made up of the three following parts:
    - (1) IF amplifier: The IF amplifier is in 3 stages, and the amplifier tubes used are the RV 12 P 2001. The band filter circuits are temperature compensated, and the individual band filters are capacity coupled. The first two amplifier stages are diametrically coupled, and the necessary reduction of tube noise is obtained through this. Their oscillator grid circuits are stepless.
    - (2) Voltage control generator: A diode tube RG 12 D 2 generates the voltage control. Behind the two amplifier stages of the IF amplifier, a part of the HF is taken off and fed to the diode; on this the field density is dependent. Continuous voltage is in a RC chain and is used as a voltage control. The third stage of the IF amplifier becomes forward-controlled through the voltage control already generated in stage two.
    - (3) Demodulator: The second diode stretch of the RG 12 D 2 is used as a demodulator and from this stage the LF is fed across the LF part.

The tuning control tube is a RG 12 D 3: The two diode stretches lie on a reference circuit which is detuned against the IF. The voltage control for the rectification is taken from the bridge circuit.

~~CONFIDENTIAL~~~~SECRET~~/CONTROL - U.S. OFFICIALS ONLY

50X1-HUM

~~CONFIDENTIAL~~

CENTRAL INTELLIGENCE AGENCY

- 3 -

50X1-HUM

- d. Low frequency part: The low frequency is carried over a condenser to an amplifying tube, a RV 12 P 2000. In the anode circuit of this tube lie four circuits, and their inductivity is developed through transformers. Two of these transformers have a high frequency iron core; the two others are built out of transformer plates in M-section. Each circuit capacity is measured against a styroflex condenser with a 1 percent tolerance. The two secondary coils of the circuit transformer are switched on one after the other and, with their induced current, activate four sirutor rectifiers which in turn generate a continuous voltage over a resistance condenser linked to a grid control of the successive relay tubes.
- (1) A RV 12 P 2000 tube now serves as a relay tube: In each anode circuit of these tubes there is a relay coil for the associated tube relay. These relay coils are switched, one after the other, and the center lies on the positive anode voltage. Each relay carries a second winding, and all these are also switched on.
- (2) An end of this winding lies on the parallel connection of the unblocked screen grid of both control tubes; the other end is carried over a series resistance on the positive anode voltage. In the anode circuit of one control tube lies, in addition, a transformer repeater for the firing control. A switch, with the positions A, B, and C, controls the relay contact for the momentary impulses; negative two times with a bias voltage, and once without.

~~CONFIDENTIAL~~

~~SECRET~~ CONTROL - U.S. OFFICIALS ONLY

50X1-HUM